

090444-03001

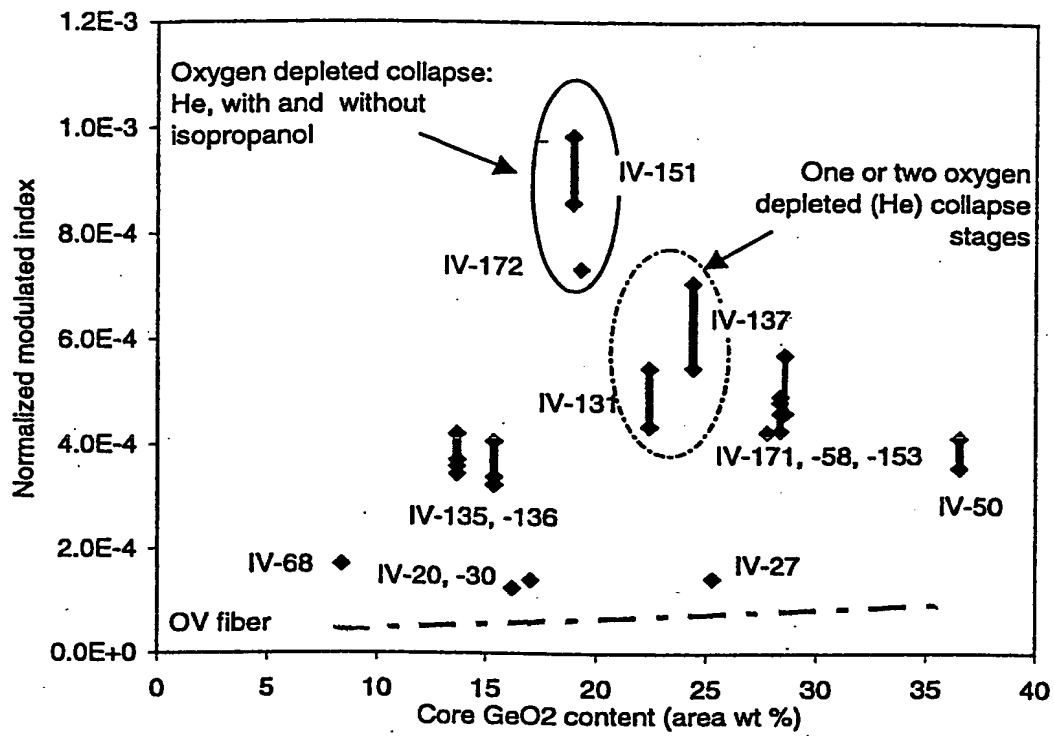


Fig. 1

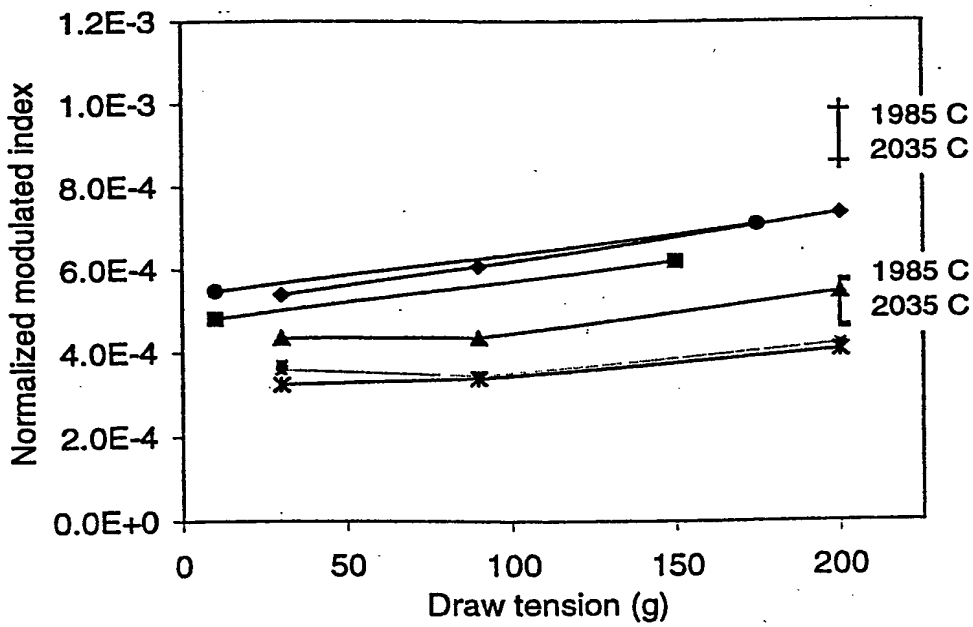


Fig. 2

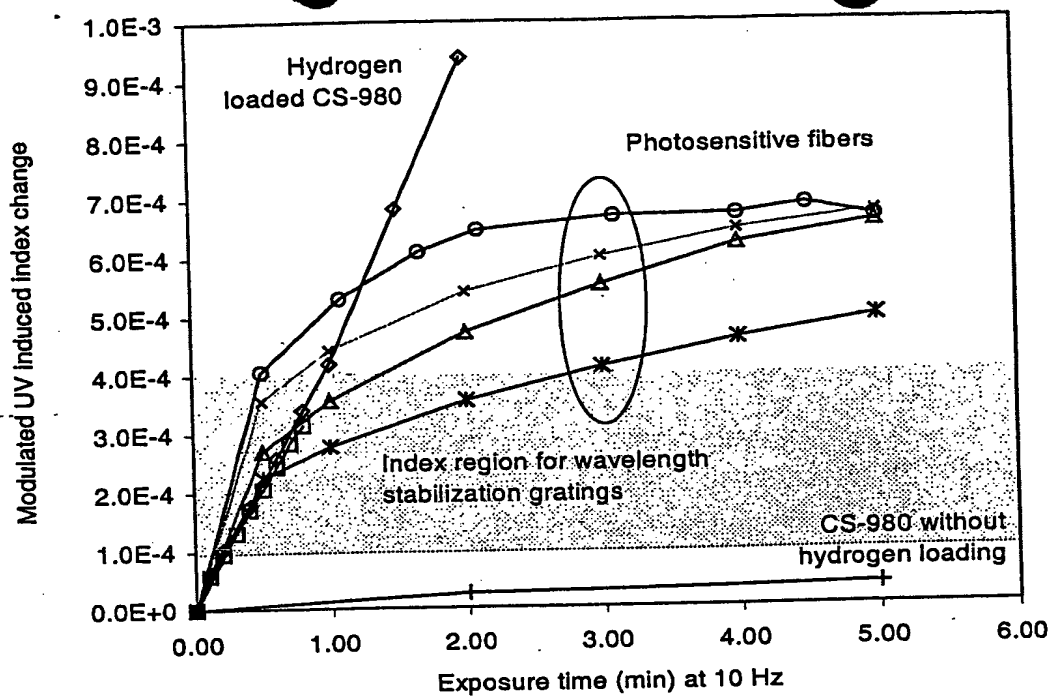


Fig. 3

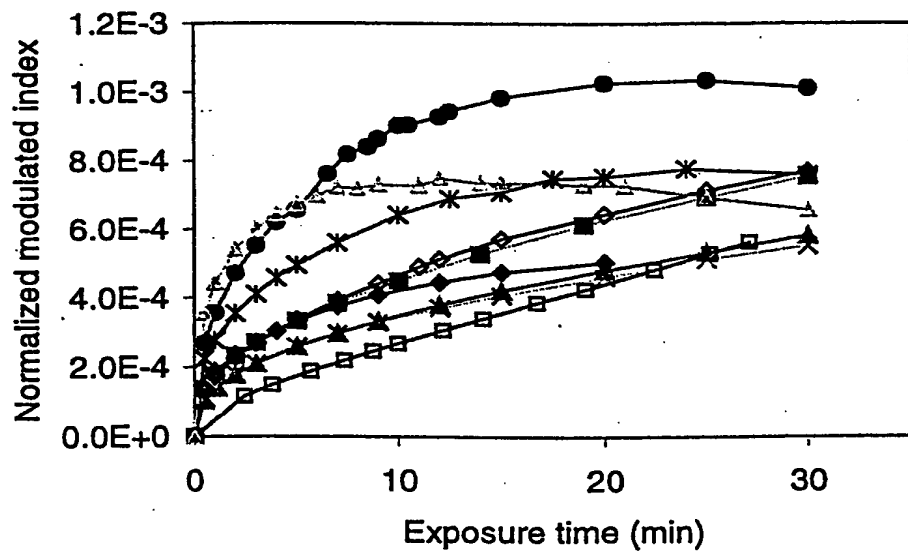


Fig. 4

09821474.033001

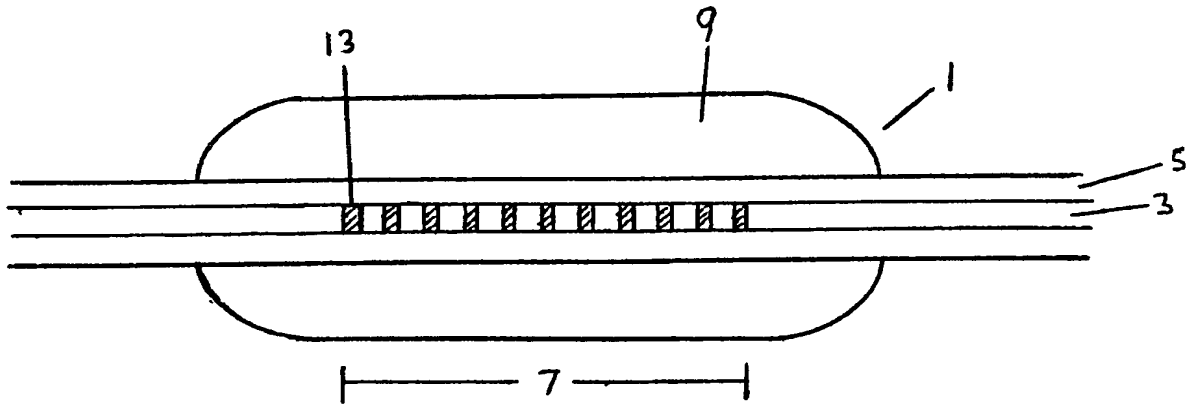


Fig. 5

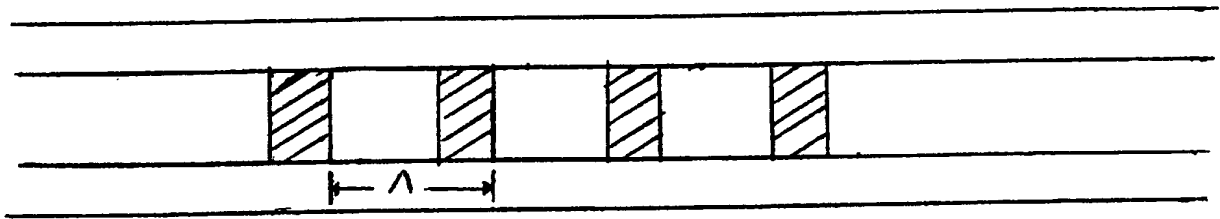


Fig. 6

Figure 7

Fiber	GeO ₂	Other	Draw temp.	Draw tens.	O ₂ /Cl ₂	GeCl ₄	2-propano l	He	η	Growth type	15' δn_{MOD}
	(area avg., wt%)	(area avg., wt%)	(C)	(g)	300/50 sccm	50-280 sccm		300 sccm			
IV-20	16.2		2035	90	•	50			0.86	Mono	$1.26 \cdot 10^{-4}$
IV-27	25.3		2035	90	•	100			0.91	Mono	$1.44 \cdot 10^{-4}$
IV-30	17.04		2035	90	•	100			0.91	Mono	$1.42 \cdot 10^{-4}$
IV-46			2035	90	•	75			0.82	Mono	$*3.8 \cdot 10^{-5}$
IV-50	36.5		2035	90	•	280			0.87	Mono	$3.6-4.1 \cdot 10^{-4}$
IV-58	28.4		2035	90	•	280			0.87	Mono	$4.3-4.9 \cdot 10^{-4}$
IV-68	8.40	3.7 P ₂ O ₅	2035	90	•	50			0.59	Mono	$1.71 \cdot 10^{-4}$
IV-131	22.40		2035	30	(1,2)	80 (1,2)		(3)	0.77	mono	$4.35 \cdot 10^{-4}$
IV-131	22.40		2035	90	(1,2)	80 (1,2)		(3)	0.77	mono	$4.36 \cdot 10^{-4}$
IV-131	22.40		2035	200	(1,2)	80 (1,2)		(3)	0.77	mono	$5.46 \cdot 10^{-4}$
IV-135	13.67		2035	30	•	•			0.76	mono	$3.72 \cdot 10^{-4}$
IV-135	13.67		2035	30	•	•			0.76	mono	$3.59 \cdot 10^{-4}$
IV-135	13.67		2035	90	•	•			0.76	mono	$3.45 \cdot 10^{-4}$
IV-135	13.67		2035	200	•	•			0.76	mono	$4.22 \cdot 10^{-4}$
IV-136	15.35		2035	30	•	•	• RT		0.84	mono	$3.24 \cdot 10^{-4}$
IV-136	15.35		2035	90	•	•	• RT		0.84	mono	$3.39 \cdot 10^{-4}$
IV-136	15.35		2035	200	•	•	• RT		0.84	mono	$4.07 \cdot 10^{-4}$
IV-137	24.40		2035	10	(1)	(1)80	(2,3)50 C	(2,3)	0.79	mono	$5.48 \cdot 10^{-4}$
IV-137	24.40		2035	175	(1)	(1)80	(2,3)50 C	(2,3)	0.79	mono	$7.08 \cdot 10^{-4}$
IV-151	18.96		1985	200				•	0.76	mono	$9.85 \cdot 10^{-4}$
IV-151	18.96		2035	200				•	0.76	mono	$8.60 \cdot 10^{-4}$
IV-153	28.60		1985	200	•		• 67 C		0.81	mono	$5.72 \cdot 10^{-4}$
IV-153	28.60		2035	200	•		• 67 C		0.81	mono	$4.62 \cdot 10^{-4}$
IV-171	27.80		2035	90	•		• 60 C		0.81	mono	$4.26 \cdot 10^{-4}$
IV-172	19.30		2035	90			• 75 C		0.79	slow IIA	$7.34 \cdot 10^{-4}$

Fiber parameters for the GeO₂ doped MCVD fibers tested. Dopant concentrations are area weight averages. Core overlap integrals are calculated based on an estimated step index profile. Ranges indicate that more than one measurement was carried out on samples of the same fiber. *DC index, modulated index too weak to measure.

Figure 8

Fiber	GeO ₂	Other	Draw temp.	Draw tens.	O ₂ /Cl ₂	GeCl ₄	2-propanol	He	η	Growth type	15' δn_{MOD}
	(area avg., wt%)	(area avg., wt%)	(C)	(g)	300/50 sccm	50-280 sccm		300 sccm			
IV-60	13	3.4	2035	90	•	280			0.91	mono	$4.93 \cdot 10^{-4}$
IV-69	16.1	8.8	2035	90	•	150			0.91	mono	$4.7-5.1 \cdot 10^{-4}$
IV-76	18.1	8.1	2035	90	•	•			0.80	mono	$5.76 \cdot 10^{-4}$
IV-81	12.8	10.8	2035	90	•	•			0.59	mono	$7.09 \cdot 10^{-4}$
IV-82	13	10	2035	90	•	•			0.74	mono	$5.59 \cdot 10^{-4}$
IV-83	11.9	11.4	2035	90	•	90			0.43	mono	$9.24 \cdot 10^{-4}$
IV-106	20.5	12.7	2035	90	•	90			0.80	mono	$2.7-4.4 \cdot 10^{-4}$
IV-108	23.7	14.8	2035	90	•	80			0.75	IIA	$5.7-6.6 \cdot 10^{-4}$
IV-118	21.78	16.31	2035	?	•	81			0.87	IIA	$3.9-4.1 \cdot 10^{-4}$
IV-118	21.78	16.31	2035	30	•	81			0.87	IIA	$5.38 \cdot 10^{-4}$
IV-118	21.78	16.31	2035	90	•	81			0.87	IIA	$6.07 \cdot 10^{-4}$
IV-118	21.78	16.31	2035	200	•	81			0.87	IIA	$7.35 \cdot 10^{-4}$
IV-125	24.60	18.10	2035	10	•	280			0.88	IIA	$4.81 \cdot 10^{-4}$
IV-125	24.60	18.10	2035	150	•	280			0.88	IIA	$6.20 \cdot 10^{-4}$
IV-163	17.60	17.40	2035	90	•	280		•	0.83	IIA	$3.68 \cdot 10^{-4}$
IV-164	18.00	19.20	2035	90			• 60 C	•	0.81	IIA	$4.66 \cdot 10^{-4}$
CMS fibers											
IV-122 Ø=clad	21.40 (4.58)	4.00 (21.43)	2035	90	•	•			1.00	mono	$3.04 \cdot 10^{-4}$
IV-168 Ø=clad	21.50 (10.59)	14.60 (26.54)	2035	90	•	•			1.00	slow IIA	$6.86 \cdot 10^{-4}$

Fiber parameters for the GeO₂-B₂O₃-doped MCVD fibers tested. Dopant concentrations are area weight averages. Core overlap integrals are calculated based on an estimated step index profile. Ranges indicate more than one measurement on samples from the same fiber.